

Science 9 – Home Learning Week 3

For this week we are going to dive a little further into sexual reproduction. Read the notes given and answer the following questions:

- 1) What is conjugation? Give a brief explanation of the process.
- 2) What is a hermaphrodite? Give two examples and explain what the benefits of this might be.
- 3) What are the two chromosomes in humans called?
- 4) Explain the difference between external and internal fertilization, giving examples as you do it.

When finished, feel free to email me your responses/notes if you would like some feedback 😊

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Notes:

Topics in Sexual Reproduction

- Conjugation
- Hermaphrodites
- Internal/External Fertilization
- Meiosis

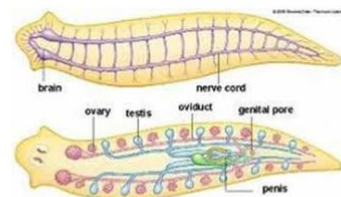
Conjugation

- In Conjugation, two cells come in contact with each other and exchange small pieces, but rarely all, of their genetic information.
- Bacteria who normally reproduce asexually through binary fission may also reproduce sexually through conjugation.
- If the genetic material that is exchanged includes genes that allow the bacteria to survive in a new environment, both of the cells will now be able to survive in the environment (as well as all the descendants).
- Conjugation increases the diversity of bacteria species.

Hermaphrodites

- An organism that can create both male and female sex cells is called a Hermaphrodite.
- Examples: tomato plants, sponges, and earthworms.
- They contain male sex cells that produce sperm and female sex organs that produce eggs.
- Hermaphrodites can reproduce with any other member of their species.

- In some cases, two hermaphrodite animals can join together, and each deposits sperm into the other animal. Example: flatworms



- Some animals that live in water simply release their sex cells into the water.
- This usually happens a certain time of year, so all the animals of one species release their sex cells at the same time.
- Land plants, many of which are hermaphrodites, have a similar strategy.

Separate Sexes

- Most complex animals and some plants have separate sexes; males and females.
- Males produce sperm cells and females produce egg cells.
- Review:
- Two chromosomes determine which individuals are male and which are female.
- In humans, the two chromosomes are called X and Y.
- Females have a pair of X chromosomes and males have a single X chromosome (from the mother) and a much smaller y chromosome (from the father).

- Animals with separate sexes use one of two methods of fertilization.
- 1) External fertilization
- 2) Internal fertiliation

- **External Fertilization** is when sex cells unite outside the female's body. For example, female fish release their egg cells, and the male releases the sperm.
- **Internal fertilization** - sperm meets the egg inside the body.